

CLAIMS

What is claimed is:

1. A self energized brake assembly comprising:
a rotatable brake member;
a first arm pivotally attached about a first pivot;
a second arm pivotally attached about a second pivot, said second pivot spaced a distance from said first pivot; and
an adjustable member to control gain in braking force from self-energization by adjusting said distance between said first and second pivots.
2. The assembly as recited in claim 1, comprising a biasing member disposed between said first and second arms to bias said first and second pivots toward each other.
3. The assembly as recited in claim 1, wherein said adjustable member is a spring disposed to bias said first and second pivots away from each other.
4. The assembly as recited in claim 1, comprising an electric drive for adjusting said distance between said first and second pivots.
5. The assembly as recited in claim 1, wherein said first and second pivots are disposed on a common plane and movable along said plane to adjust braking force applied to said rotatable brake member.
6. The assembly as recited in claim 1, wherein said adjustable member comprises a first threaded member threadingly engaged to one of said first and second arms.

7. The assembly as recited in claim 6, comprising a drive for rotating said first threaded member, rotation of said first threaded member causes movement of said first and second arms between said engaged and disengaged positions.

8. The assembly as recited in claim 7, comprising a second threaded member threadingly engagable to one of said first and second arms on a distal end of said first and second arms from said first threaded member, and a second drive for rotating said second threaded member to move said first and second arms between said engaged and disengaged positions.

9. The assembly as recited in claim 1, wherein said first and second pivots are disposed on a support a fixed distance from each other.

10. A self-energizing brake assembly comprising:
 - a rotatable brake member;
 - a first friction element movable into engagement with said rotatable brake member; and
 - a first pivot arm having a first segment pivotally attached to a support, and a second segment pivotally attached to said friction element, said pivot arm drives said friction element toward said rotatable brake member in response to engagement therebetween.
11. The assembly of claim 10, wherein a distance between said first and second segments defines a desired force between said friction element and said rotatable brake member.
12. The assembly of claim 10, comprising a second pivot arm attached between said friction element and said support.
13. The assembly of claim 12, wherein said first and second pivot arms comprise a compliant portion.
14. The assembly of claim 12, wherein said first and second pivot arms comprise a biasing member.
15. The assembly of claim 12, wherein said first and second pivot arms comprise an adjustable length.
16. The assembly of claim 12, wherein said first segment is pivotally attached to said support at a centerline of rotation of said rotatable brake member.

17. The assembly of claim 12, wherein said first and second pivot arms are pivotally attached a common distance from a centerline of said rotatable brake member.

18. The assembly of claim 10, comprising a drive having an actuation arm attached to said friction element, said actuation arm movable by said drive to move said friction element between engaged and disengaged positions with said rotatable brake member.

19. A self-energizing brake assembly comprising:
a rotatable brake member;
a first and second friction element movable between an engaged position with said rotatable brake member, and a disengaged position;
a first pivot arm pivotally attached to a support, said first pivot arm pivotally attached to said first and second friction elements such that rotation of said first pivot arm changes a distance between said first and second friction elements.
20. The assembly as recited in claim 19, wherein one of said first and second friction elements is fixed against rotation and movable linearly between said engaged and disengaged positions.
21. The assembly as recited in claim 19, comprising a second pivot arm disposed parallel to said first pivot arm, said second pivot arm pivotally attached to said support and pivotally attached to said first and second friction elements.
22. The assembly as recited in claim 21, wherein a length of said first and second pivot arms is adjustable.
23. The assembly as recited in claim 22, wherein said first and second pivot arms comprise a compliant portion.
24. The assembly as recited in claim 22, wherein said first and second pivot arms comprise a biasing member.

25. The assembly of claim 19, comprising an actuation arm attached to one of said friction elements and rotatable to vary said distance between said first and second friction elements.

26. The assembly of claim 25, wherein said actuation arm and said pivot arm are a common member.

27. The assembly of claim 25, wherein said actuation arm is pivotally attached to a support and rotates said first and second friction elements to control said distance between said first and second friction elements.

28. A method of controlling braking force gain created by a self-energizing brake assembly comprising the steps of:

- a.) supporting a first brake pad about a first pivot and a second brake pad about a second pivot; and
- b.) adjusting a distance between the first and second pivots to control a magnitude of braking force generated by self-energization.

29. The method as recited in claim 28, comprising increasing the distance between the first and second pivots to decrease the magnitude of braking force generated by self-energization.

30. The method as recited in claim 28, wherein said step a.) comprises supporting said first and second brake pads along a lever.

31. The method as recited in claim 28, wherein said step a.) comprises supporting said first and second pivots within a common plane.